FACTS
ABOUT THE SAVANNAH RIVER SITE

Savannah River Site

Dedicated to maintaining the highest possible safety standards, the Savannah River Site (SRS) is a key Department of Energy (DOE) industrial complex responsible for stewardship of the environment, the enduring nuclear weapons stockpile and nuclear materials. More specifically, the SRS processes and stores nuclear materials in support of the national defense and U.S. nuclear non-proliferation efforts. The site also develops and deploys technologies to improve the environment and treat nuclear and hazardous wastes left from the Cold War.

The SRS complex covers 198,344 acres, or 310 square miles encompassing parts of Aiken, Barnwell and Allendale counties in South Carolina, bordering the Savannah River.

The site is owned by DOE and operated by an integrated team led by Washington Savannah River Company (WSRC, parent company: Washington Group International). Under the contract that went into effect Oct. 1, 1996, and was extended with modifications through 2006, WSRC is responsible for the site's nuclear facility operations; Savannah River National Laboratory; environment, safety, health and quality assurance; and all of the site's administrative functions. The team also includes Bechtel Savannah River Inc. (parent company: Bechtel National Inc.), which is responsible for soil and groundwater closure projects, project management, design and construction services; BWXT Savannah River Company (parent company: BWX Technologies), which is responsible for nuclear materials management and Tritium Extraction Facility startup and operations; BNG America Savannah River Corporation (parent company: BNG America), which is responsible for the site's solid waste activities and infrastructure; and CH2 Savannah River Company (parent company: CH2M Hill), which is responsible for deactivation, decommissioning and demolition.

Savannah River Site Focus

The Savannah River Site is committed to our people, missions and the future. SRS has a long track record of being the safest site in the DOE complex and one of the safest major industrial sites in the world. Protecting workers, the public, the environment, and national security interests is our highest goal. SRS will continue to maintain needed facilities and infrastructure while training and retaining a skilled and motivated workforce to ensure our technical capability and performance. The SRS team has made commitments to its regulatory organizations, to the two states of the Central Savannah River Area, and to the community. Recognizing the imperative of open communication and trust, SRS will strive to accomplish regulatory milestones and community-driven obligations among the site's various neighbors and stakeholders. We also focus on cost effectiveness in contract and project management and a cross-cutting corporate perspective that will best serve SRS, other DOE sites and national labs, and the U.S. Government.

SRS Business Approach

SRS and its personnel aspire to achieve outstanding performance for DOE and the nation by embracing and practicing four Core Values:
Safety - injury-free and incident-free performance.
Integrity - individually and corporately honest and trustworthy, always
Teamwork - working together to achieve our common vision and objectives
Results - cost effectively meeting goals and commitments

History

During the early 1950s SRS began to produce materials used in nuclear weapons, primarily tritium and plutonium-239. Five reactors were built to produce nuclear materials. Also built were support facilities including two chemical separations plants, a heavy water extraction plant, a nuclear fuel and target fabrication facility, a tritium extraction facility and waste management facilities.

Irradiated materials were moved from the reactors to one of the two chemical separations plants. In these facilities, known as "canyons," the irradiated fuel and target assemblies were chemically processed to separate useful products from waste. After refinement, nuclear materials were shipped to other DOE sites for final application. SRS produced about 36 metric tons of plutonium from 1953 to 1988.

Looking Forward

While the changing world has caused a downsizing of the site's original defense mission, the future of SRS lies in several areas: reducing the nuclear danger, transferring applied technology to government and non-government entities, cleaning up the site and managing the waste SRS has produced, and forming economic and industrial alliances.

New Missions

SRS is one of the primary DOE sites with missions to address issues of national security and non-proliferation, including legacy material disposition.

SRS has been designated to continue as DOE's center for the supply of tritium to the enduring nuclear weapons stockpile. DOE has announced that its primary new source of tritium will be existing commercial reactors in the Tennessee Valley Authority system. A new facility is now under construction at SRS to extract the tritium from rods irradiated in TVA's reactors and load it into containers for shipment to the Department of Defense. This new Tritium Extraction Facility is expected to begin normal operations in fiscal year 2007.

Plutonium and nuclear material management missions now being conducted at SRS will be expanded to include materials from dismantled weapons and surpluses from other DOE sites. This new mission will be focused on the disposition of excess weapons-grade material consistent with the U.S.-Russian agreement on nonproliferation. DOE has chosen SRS is to be the location for the Department's plutonium pit disassembly and conversion and mixed oxide fuel fabrication facilities. These missions, which convert excess weapons-usable plutonium to a form that can be used in commercial power reactors, establish SRS's vital role in plutonium management for DOE.

On-Going Missions

Tritium

Tritium, with a half-life of 12.3 years, must be replenished, and SRS is the nation's only facility for recycling, purifying and reloading tritium from nuclear weapons reservoirs returned from service. Recycling tritium allows the United States to stretch its tritium supplies.

Spent Fuel

Spent nuclear fuel from the Site's production reactors, and from domestic and foreign research reactor programs, is currently stored at SRS awaiting final disposition.

For nearly 40 years, the SRS Receiving Basin for Offsite Fuels provided safe receipt and interim underwater storage of research reactor fuel. Today, all of this fuel has been consolidated into the L Area Disassembly Basin, a large, water-filled, reinforced-concrete facility. Until 1988, foreign research reactor operators routinely returned U.S.-origin spent fuel to this country. At the urging of the U.S. Department of State and the International Atomic Energy Agency, DOE renewed that policy in 1996. The first shipment of foreign-research-reactor, spent nuclear fuel under the renewed policy arrived at SRS that September and will continue until 2009.

Canyon Operations

SRS has its two primary separations facilities — called canyons — located in F and H areas. F Canyon and H Canyon — together with the FB Line and HB Line, which are located atop the canyons — are where nuclear materials historically have been chemically recovered and purified.

HB Line has produced plutonium-238 for NASA. In 1995, SRS completed a five-year campaign to supply plutonium-238 for NASA's Cassini mission, an unmanned expedition to the planet Saturn, which was launched October 13, 1997 and arrived at the ringed planet July 1, 2004, after a flawless flight.

Currently, H Canyon continues to stabilize and manage the remaining inventory of plutonium-bearing materials at SRS. F Canyon has completed its production mission and is being deactivated. FB Line is packaging and stabilizing plutonium materials for long-term storage, an activity that is expected to be complete by early 2005. In addition, in July 1996, DOE determined that H Canyon, should be used to convert a large quantity of weapons-usable highly enriched uranium to low-enriched material. No longer weapons-usable, the material will be suitable as fuel in commercial power reactors.

Nuclear Nonproliferation

Among its nuclear nonproliferation activities, SRS has "blended down" weapons-usable highly enriched uranium to make low enriched uranium, which will be converted to commercial reactor fuel for use by TVA

Waste Management

Weapons material production produced unusable byproducts, such as radioactive waste. About 36 million gallons of high-level radioactive liquid waste are stored in tanks.

The Defense Waste Processing Facility (DWPF) is processing the highly radioactive waste, bonding radioactive elements in borosilicate glass, a stable storage form. DWPF began operations in March 1996.

Much of the volume in the tanks ultimately will be separated as relatively low-level radioactive salt solution, which is mixed with cement, ash, and furnace slag and poured into permanent concrete vaults for disposal at a facility called Saltstone.

In addition to high-level waste, other radioactive wastes at the site are: low-level solid and liquid waste (which includes items such as protective clothing, tools and equipment that have become contaminated with small amounts of radioactive material); and transuranic waste, which contains alpha-emitting isotopes with an atomic number greater than uranium. Other wastes include hazardous waste, which is any toxic, corrosive, reactive or ignitable material that could affect human health or the environment; mixed waste, which contains both hazardous and radioactive components; and sanitary waste, which, like ordinary municipal waste, is neither radioactive nor hazardous.

SRS disposes of low-level radioactive waste on site in engineered trenches, vaults, or grout-filled trenches, depending on the degree to which the waste needs to be isolated from the environment. Some types of low-level waste are technically unsuitable for disposal at SRS waste management facilities. In July 2001, SRS began shipping some of these wastes to off-site treatment and disposal facilities, such as Envirocare of Utah and DOE's Nevada Test Site.

Transuranic (TRU) waste had been stored temporarily at SRS until the opening of the Waste Isolation Pilot Plant (WIPP) in New Mexico; WIPP is a DOE deep geological disposal facility specifically designed for TRU waste. In 2001, SRS began shipping its TRU waste to WIPP and is now pursuing an aggressive goal to complete shipments of all legacy TRU waste by fiscal year 2006.

Hazardous waste is routinely shipped offsite to commercial facilities for treatment and disposal. In 2001, SRS made its first-ever shipments of mixed waste for treatment offsite, and continues to decrease the inventory of mixed waste using available RCRA-regulated treatment and disposal vendors.

Decommissioning and Demolition (D&D)

With DOE's focus on accelerating cleanup and eliminating risks, SRS is concentrating on shrinking the footprint left from decades of operations. Shrinking the footprint also better positions the site for future missions. The lifecycle scope for D&D is 1,013 facilities, and 253 are scheduled for D&D before the end of 2006.

The Site D&D organization, in close integration with the Soil and Groundwater Closure Projects organization, is focusing on closing entire areas, one at a time. Areas at the periphery of SRS are targeted first—T Area, D

Area, A Area and M Area. F Area is also undergoing intense D&D because of the opportunity it presents for major risk elimination.

T Area will be completely closed by the end of 2006, with M Area not far behind. A large powerhouse, owned and operated by South Carolina Electric and Gas, will be the only structure still standing in D Area. In A Area the Savannah River National Laboratory and the Savannah River Ecology Laboratory will remain along with certain administrative support facilities.

Soil and Groundwater Cleanup

In 1981, SRS began inventorying waste units. There are a total of 515 inactive waste and groundwater units. Waste sites range in size from a few square yards to tens of acres and include basins, pits, piles, burial grounds, landfills, tanks and associated groundwater contamination. Remediation of the waste sites is regulated under the Resource Conservation and Recovery Act and the Comprehensive Environmental Response, Compensation, and Liability Act.

So far, more than 300 of the 515 waste sites have been closed. Also, billions of gallons of groundwater have been treated, with over one million pounds of solvents removed. Even though the site has had success, this cleanup process is expected to take decades.

SRS seeks public participation in prioritizing the Environmental Management program. One way this is accomplished is through the SRS Citizens Advisory Board (CAB), formed in February 1994. This group of 25 individuals with diverse viewpoints provides advice to DOE, the U.S. Environmental Protection Agency and the South Carolina Department of Health and Environmental Control.

Research and Development

The Savannah River National Laboratory (known as the Savannah River Technology Center until May 2004) creates, tests and deploys solutions to the technological challenges facing the site and the nation. SRNL researchers have made significant advances in glass technology, hydrogen technology, nonproliferation technology, environmental characterization and cleanup, sensors and probes, and other fields.

The laboratory's 750-person research staff includes several internationally recognized experts; one-fourth of the research staff have doctorates. SRNL's unique facilities include biotechnology laboratories, laboratories for the safe study and handling of radioactive materials, a field demonstration site for testing and evaluating environmental cleanup technologies and laboratories for ultra-sensitive measurement and analysis of radioactive materials.

Today, while the laboratory continues to solve the site's technological challenges, half of its work now comes from non-SRS customers, including DOE, the National Nuclear Security Administration, other DOE sites and other federal agencies. The laboratory's largest work-for-others contract to date is a $62 million, multi-year contract to demonstrate and evaluate the processes that will be used at the Hanford Site to treat and dispose of the waste in Hanford's waste tanks.

Because of the increased emphasis on sharing the site's expertise with the nation that, for more than four decades, has invested in its work, SRNL now forms strategic partnerships with private industry, academia and other government agencies to apply the laboratory's unique expertise to challenges of mutual interest. For example, SRNL, working with a broad-based consortium, applied its extensive hydrogen expertise to the development of a hydrogen-fueled bus that became part of the City of Augusta's public transit fleet before being shipped to another DOE site for further development.

The laboratory also shares its expertise by licensing private companies to manufacture and/or market technologies created at SRNL, a move that helps American businesses sharpen their competitive edge and provides taxpayers a second return on their investment.

Environment

Originally farmland, SRS now encompasses a timber and forestry research center managed by the U.S.D. A. Forest Service-Savannah River. The site also houses the Savannah River Ecology Laboratory, an environmental research center operated for DOE by the University of Georgia.

In 1972, DOE's predecessor agency, the Atomic Energy Commission, designated SRS as the first National Environmental Research Park. The site is home to the bald eagle and the red-cockaded woodpecker, an endangered species. Other endangered species, including the shortnose sturgeon and wood stork, visit the site from time to time. Other wildlife commonly found on the site includes alligators, white-tailed deer, wild turkeys and otters.

Employment

Today, about 10,700 people are employed at SRS, making it one of the largest employers in South Carolina. About 86 percent are employees of WSRC and its major subcontractors. DOE employees represent about 3.2 percent of the SRS population. The rest are other WSRC subcontractors and DOE contractors; the site's security contractor, Wackenhut Services Inc.; Savannah River Ecology Laboratory; and U.S.D.A. Forest Service-Savannah River.

Economic Impact

The site's economic impact ripples across a two-state area. Currently, the site's overall budget is about $1.3 billion. Of that, roughly 70 percent is payroll and employee benefits. In Fiscal Year 2005, which ended Sept. 30, 2005, the site purchased about $320.9 million in goods and services. Of that, about $150.5 million was spent in the local area.

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